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(71) Applicant (for all designated States except US): NA-
TIONAL RESEARCH COUNCIL OF CANADA
[CA/CA]; 1200 Montreal Road, Bldg. M-58, Room
EG-12, Ottawa, Ontario K1A 0R6 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): WHITFIELD,
Pamela [CA/CA]; Apt. 512, 124 Springfield Road,
Ottawa, Ontario K1M 2C8 (CA). DAVIDSON, Isobel
[CA/CA]; 1569 Delia Crescent, Orleans, Ontario K4A
2X7 (CA).

(74) Agent: ANDERSON, J., Wayne; National Research
Council of Canada, Intellectual Property Services Office,
EG-12, Bldg. M-58, 1200 Montreal Road, Ottawa, Ontario
K1A 0R6 (CA).

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(54) Title: LITHIUM METAL OXIDE ELECTRODES FOR LITHIUM CELLS AND BATTERIES

(57) Abstract: A lithium metal oxide positive electrode for a non-aqueous lithium cell or battery is disclosed. The positive electrode comprises a lithium metal oxide having a layered structure and a general formula, after in-situ or ex-situ oxidation, of $\text{Li}_x\text{Mn}_y\text{M}_{1-y}\text{O}_z$, wherein $0 \leq x \leq 0.20$, $0 < y < 1$, manganese is in the 4+ oxidation state, and M is one or more the first row transition metals: Ti, V, Cr, Mn, Fe, Co, Ni or Cu, or other specific other cations: Al, Mg, Mo, W, Ta, Si, Sn, Zr, Be, Ca, Ga, and P, which have an appropriate ionic radii to be inserted in to the structure without unduly disrupting it. Usage of the materials of the invention in lithium cells and batteries is disclosed. A process is disclosed for formation of materials of the invention.

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